CLAIMS:

1. A lithographic projection apparatus comprising:

a radiation system to provide a projection beam of radiation;

a support structure constructed and arranged to support patterning structure, the patterning structure which can be used to pattern the projection beam according to a desired pattern;

a substrate table to hold a substrate; and

a projection system to project the patterned beam onto a target portion of the substrate; and

a radiation source to supply radiation capable of removing contaminant particles adhered to an optical component without substantially heating said optical component.

2. Apparatus according to claim 1 wherein said radiation is of at least one type selected from the group comprising microwave and infra-red radiation, and being directed onto said contaminant particles.

3. Apparatus according to claim 2, wherein said infra-red radiation comprises at least one frequency in the range of from $1000cm^{-1}$ to $4600cm^{-1}$.

4. Apparatus according to claim 3, wherein the infra-red radiation comprises a range of frequencies in the range of from $1000cm^{-1}$ to $4600cm^{-1}$

5 Apparatus according to claim 3, wherein the optical component comprises a compound selected from a group comprising CaF_2, BaF_2 and MgF_2.

6. Apparatus according to claim 2, wherein said infra-red radiation comprises at least one frequency in the range of from 2800 cm^{-1} to 4600 cm^{-1}.

7. Apparatus according to claim 6, wherein the infra-red radiation comprises a range of frequencies in the range of from 2800 cm^{-1} to 4600 cm^{-1}.

8. Apparatus according to claim 6, wherein the optical component comprises quartz.

9. Apparatus according to claim 2, wherein said infra-red radiation comprises at least one frequency in the range of from 1 to 100 cm^{-1}.

10. Apparatus according to claim 6, wherein the infra-red radiation comprises a range of frequencies in the range of from 1 to 100 cm^{-1}.

11. A device manufacturing method comprising:

projecting a patterned beam of radiation onto a target portion of a layer of radiation-sensitive material on a substrate; and

removing contaminant particles which are adhered to an optical component through which the beam of radiation passes by irradiation with radiation capable of removing said contaminant particles without substantially heating said optical component.

12. A method according to claim 11, wherein said irradiation with said radiation is carried out simultaneously with exposure to the projection beam.

13. A method according to claim 11, further comprising:

determining a level of contamination of the optical component by irradiating said optical component with microwave and/or infra-red radiation and monitoring the degree of absorption of said radiation.

14. A method according to claim 12, further comprising:

determining a level of contamination of the optical component by irradiating said optical component with microwave and/or infra-red radiation and monitoring the degree of absorption of said radiation.

15. A method according to claim 11, wherein said contaminant particles are water.

16. A device manufactured according to the method of claim 11.